

IN THE CLAIMS:

- 1 1. (Previously Presented) A method for establishing identity in a file system,
2 comprising:
3 receiving a file request concerning an indicated file from a client, the request
4 received by a proxy;
5 forwarding the request from the proxy to a file server;
6 returning a reply associated with the file request from the file server to the proxy;
7 inserting, by the proxy, metadata into the file handle; and
8 sending, by the proxy, the file handle with the metadata inserted in the file handle
9 to the client, the metadata to be used in further requests to identify the client and the
10 indicated file.
- 1 2. (Previously Presented) The method of Claim 1, further comprising:
2 using the metadata in the file handles for any of eliminating a need for the proxy
3 to generate additional requests to the server to establish file identity, and for completing
4 client requests.
- 1 3. (Previously Presented) The method of Claim 1, further comprising:
2 encoding metadata in a form of a session key into the file handle, the session key
3 expiring after a predetermined amount of time.
- 1 4. (Previously Presented) The method of Claim 1, further comprising:
2 using an NFS file system as the file system.
- 1 5. (Previously Presented) The method of Claim 1, further comprising:
2 using a stateless protocol by the file system.

1 6-29. (Cancelled).

1 30. (Currently Amended) The method of claim 1, further comprising:

2 ~~sending a second file request by the client to the server;~~
3 ~~including the metadata in a further file handle sent with the second request;~~
4 receiving, from the client, the a second file request by the proxy, the second file
5 request including the metadata in a further file handle sent with the second request;
6 identifying, in response to the metadata, the client as having a permission
7 ~~permitted~~ to submit the second file request;
8 sending the second file request to the file server and not sending the metadata
9 with the second file handle to the file server; and
10 receiving by the proxy the further reply from the file server, and sending by the
11 proxy the further reply to the client.

1 31. (Currently Amended) A method for establishing identity in a file system,
2 comprising:

3 receiving a first file request concerning an indicated file from a client, the first file
4 request received by a proxy;
5 forwarding the first file request from the proxy to a file server;
6 returning a reply associated with the first file request from the file server to the
7 proxy;
8 inserting, by the proxy, metadata into the file handle;
9 sending, by the proxy, the file handle with the metadata inserted in the file handle
10 to the client, the metadata to be used in further requests to identify the client as having a
11 permission to access the indicated file;
12 ~~sending a second file request by the client to the server;~~
13 ~~including the metadata in a second file handle sent with the second file request;~~
14 receiving, from the client, the a second file request by the proxy, the second file
15 request including the metadata in a second file handle sent with the second file request;

16 identifying, in response to the metadata, that the client has the permission to
17 submit the second file request;
18 sending the second file request to the file server and not sending the metadata
19 with the second file handle to the file server; and
20 receiving by the proxy a second reply from the file server, and sending by the
21 proxy the second reply to the client.

1 32. (Previously Presented) An apparatus to establish identity in a file system,
2 comprising:
3 a proxy to receive a file request sent by a client to a file system, the proxy to
4 forward the request to a file server;
5 the file server to return a reply associated with the file request to the proxy;
6 the proxy to insert metadata into the file handle; and
7 the proxy to send the file handle with the metadata inserted in the file handle to
8 the client, the metadata to be used in further requests to identify the client and the
9 indicated file.

1 33. (Currently Amended) The apparatus as in claim 32, further comprising:
2 ~~the client to send a second file request to the server, the client to include the~~
3 ~~metadata in the second file handle sent with the second request;~~
4 the proxy to receive, by the client, the a second file request, the second file
5 request to include the metadata in the second file handle sent with the second request;
6 the proxy to identify, in response to the metadata, the client as having a
7 permission~~permitted~~ to submit the second file request;
8 ~~, and the proxy to send the second file request to the file server and not to send the~~
9 metadata with the second file handle to the file server; and
10 the proxy to receive a second reply from the file server, and the proxy to send the
11 second reply to the client.

1 34. (Previously Presented) The apparatus of Claim 32, further comprising:

2 the proxy to use the metadata in the file handle received from the client to
3 eliminate a need for additional communication with the file server to establish file
4 identity.

1 35. (Previously Presented) The apparatus of Claim 32, further comprising:
2 the proxy to encode the metadata in a form of a session key into the file handle,
3 the session key expiring after a predetermined amount of time.

1 36. (Previously Presented) The apparatus of Claim 32, further comprising:
2 an NFS file system used as the file system.

1 37. (Previously Presented) The apparatus of Claim 32, further comprising:
2 a stateless protocol used by the file system.

1 38. (Currently Amended) A ~~computer-readable~~ non-volatile memory executed on a
2 computer, comprising:
3 said ~~computer-readable~~ non-volatile memory containing instructions-procedures
4 for execution on ~~at the processor-computer~~ for a method of establishing identity in a file
5 system, the method having the steps of,
6 receiving a file request concerning an indicated file from a client, the request
7 received by a proxy;
8 forwarding the request from the proxy to a file server;
9 returning a reply associated with the file request from the file server to the proxy;
10 inserting, by the proxy, metadata into the file handle; and
11 sending, by the proxy, the file handle with the metadata inserted in the file handle
12 to the client, the metadata to be used in further requests to identify the client and the
13 indicated file.

1 39. (Previously Presented) A method for establishing identity in a file system,
2 comprising:
3 receiving a first file request concerning an indicated file from a client, the first file
4 request received by a proxy;
5 forwarding the first file request from the proxy to a file server;
6 granting a permission for the request to be acted upon by the file system in
7 response to a predetermined protocol;
8 returning a reply associated with the first file request from the file server to the
9 proxy;
10 inserting, by the proxy, a session key into the file handle; and
11 sending, by the proxy, the file handle with the session key inserted in the file
12 handle to the client, the session key to be used in further requests to identify the client
13 and the indicated file.

1 40. (Currently Amended) The method according to claim 39, further comprising:
2 ~~sending a second file request by the client to the server;~~
3 ~~including the session key in a second file handle sent with the second file request;~~
4 receiving, from the client, a second file request by the proxy, the second file
5 request including the session key in a second file handle sent with the second file request;
6 identifying, in response to the session key, that the client has the permission to
7 submit the second file request;
8 sending the second file request to the file server and not sending the session key
9 with the second file handle to the file server; and
10 receiving by the proxy a second reply from the file server, and sending by the
11 proxy the second reply to the client.

1 41. (Previously Presented) The method according to claim 39, further comprising:
2 causing the session key to expire after a selected amount of time.

1 42. (Previously Presented) The method according to claim 39, further comprising:

2 causing the session key to expire after a selected amount of usage.

1 43. (Previously Presented) The method according to claim 39, further comprising:
2 using a NFS protocol as the predetermined protocol.

1 44. (Previously Presented) The method according to claim 43, further comprising:
2 using as the predetermined protocol a two way communication exchange between
3 the proxy and the file server.

1 45. (Previously Presented) An apparatus to establish identity in a file system,
2 comprising:
3 a proxy to receive a file request sent by a client to a file system, the proxy to
4 forward the request to a file server;
5 the file server to return a reply associated with the file request to the proxy;
6 the proxy to insert a session key into the file handle; and
7 the proxy to send the file handle with the session key inserted in the file handle to
8 the client, the session key to be used in further requests to identify the client and the
9 indicated file.

1 46. (Currently Amended) The apparatus as in claim 45, further comprising:
2 ~~the client to send a second file request to the server, the client to include the~~
3 ~~session key in a further file handle sent with the second request;~~
4 the proxy to receive, by the client, the a second file request, the second file
5 request to include the session key in a further file handle sent with the second request;
6 the proxy to identify, in response to the ~~metadatasession key~~, the client as having
7 a permission to submit the another file request; ~~and~~
8 the proxy to send the second request to the file server and not to send the session
9 key with the second file handle to the file server; and
10 the proxy to receive a further reply from the file server, and the proxy to send the
11 further reply to the client.

1 47. (Previously Presented) The apparatus of Claim 45, further comprising:
2 the proxy to use the metadata in the file handle received from the client to
3 eliminate a need for additional communication with the file server to establish file
4 identity.

1 48. (Previously Presented) The apparatus of Claim 45, further comprising:
2 the proxy to encode the metadata in a form of a session key into the file handle,
3 the session key expiring after a predetermined amount of time.

1 49. (Previously Presented) The apparatus of Claim 45, further comprising:
2 an NFS file system used as the file system.

1 50. (Previously Presented) The apparatus of Claim 45, further comprising:
2 a stateless protocol used by the file system.

1 51. (Currently Amended) An apparatus to establish identity in a file system, comprising:
2 a proxy to receive a first file request sent by a client to a file system, the proxy to
3 forward the first file request to a file;
4 the file server to return a reply associated with the first file request to the proxy;
5 the proxy to insert a session key into a file handle;
6 the proxy to send the file handle with the session key inserted in the file handle to
7 the client, the session key to be used in a second file request to identify the client and the
8 indicated file;
9 ~~the client to send a second file request to the server, the client to include the~~
10 ~~session key in a second file handle sent with the second file request;~~
11 the proxy to receive, by the client, a the second file request, the second file
12 request to include the session key in a second file handle sent with the second file
13 request;~~and~~

14 the proxy to identify, in response to the session key, the client as having a
15 permission to submit the second file request;
16 ~~and the proxy to send the second file request to the file server and not to send the~~
17 session key with the second file handle to the file server; and
18 the proxy to receive a second reply from the file server, and the proxy to send the
19 second reply to the client.

1 52. (Previously Presented) A method for establishing identity in a file system,
2 comprising:
3 receiving a first file request concerning an indicated file from a client, the first file
4 request received by a proxy;
5 forwarding the first file request from the proxy to a file server;
6 determining that the client has a permission to have the request acted upon by the
7 file system in response to a predetermined protocol;
8 returning a reply associated with the first file request from the file server to the
9 proxy;
10 inserting, by the proxy, a cryptographic information into the file handle;
11 sending, by the proxy, the file handle with the cryptographic information inserted
12 in the file handle to the client, the cryptographic information to be used in one or more
13 requests to identify the client and the indicated file.

1 53. (Currently Amended) The method according to claim 52, further comprising:
2 ~~sending a second file request by the client to the server;~~
3 ~~including the cryptographic information in a second file handle sent with the~~
4 ~~second file request;~~
5 receiving, by the client, a the second file request by the proxy, the second file
6 request including the cryptographic information in a second file handle sent with the
7 second file request;
8 identifying, in response to the cryptographic information, that the client has the
9 permission to submit the second file request;

10 sending the second file request to the file server and not sending the cryptographic
11 information with the second file handle to the file server; and
12 receiving by the proxy a second reply from the file server, and sending by the
13 proxy the second reply to the client.

1 54. (Previously Presented) The method according to claim 52, further comprising:
2 causing the cryptographic information to expire after a selected amount of time.

1 55. (Previously Presented) The method according to claim 52, further comprising:
2 causing the cryptographic information to expire after a selected amount of usage.

1 56. (Previously Presented) The method according to claim 52, further comprising:
2 using a NFS protocol as the predetermined protocol.

1 57. (Previously Presented) The method according to claim 52, further comprising:
2 using as the predetermined protocol a two way communication exchange between
3 the proxy and the file server.

1 58. (Previously Presented) An apparatus to establish identity in a file system,
2 comprising:
3 a proxy to receive a file request sent by a client to a file system, the proxy to
4 forward the request to a file server;
5 the file server to return a reply associated with the file request to the proxy;
6 the proxy to insert a cryptographic information into the file handle; and
7 the proxy to send the file handle with the cryptographic information inserted in
8 the file handle to the client, the cryptographic information to be used in further requests
9 to identify the client and the indicated file.

1 59. (Currently Amended) The apparatus as in claim 58, further comprising:

2 ~~the client to send a second file request to the server, the client to include the~~
3 ~~cryptographic information in a second file handle sent with the second request;~~

4 the proxy to receive, by the client, a the second request, the second file request to
5 include the cryptographic information in a second file handle sent with the second
6 request;

7 ~~the proxy to identify, in response to the metadata~~cryptographic information, the
8 client as having a permission to submit the second file request; ~~and~~

9 the proxy to send the second request to the file server and not to send the
10 cryptographic information with the second file handle to the file server; and

11 the proxy to receive a further reply from the file server, and the proxy to send the
12 further reply to the client.

1 60. (Currently Amended) The apparatus of ~~Claim-claim~~ 58, further comprising:

2 the proxy to use the metadata in the file handle received from the client to
3 eliminate a need for additional communication with the file server to establish file
4 identity.

1 61. (Currently Amended) The apparatus of ~~Claim-claim~~ 58, further comprising:

2 the proxy to encode the metadata in a form of a cryptographic information into the
3 file handle, the cryptographic information expiring after a predetermined amount of time.

1 62. (Currently Amended) The apparatus of ~~Claim-claim~~ 58, further comprising:

2 an NFS file system used as the file system.

1 63. (Currently Amended) The apparatus of ~~Claim-claim~~ 58, further comprising:

2 a stateless protocol used by the file system.

1 64. (Currently Amended) An apparatus to establish identity in a file system,

2 comprising:

3 a proxy to receive a first file request sent by a client to a file system, the proxy
4 to forward the first file request to a file server;
5 the file server to return a reply associated with the first file request to the
6 proxy;
7 the proxy to insert a cryptographic information into a file handle;
8 the proxy to send the file handle with the cryptographic information inserted
9 in the file handle to the client, the cryptographic information to be used in a second
10 file request to identify the client and the indicated file;
11 ~~the client to send a second file request to the server, the client to include the~~
12 ~~cryptographic information in a second file handle sent with the second file request;~~
13 the proxy to receive, by the client, a ~~the~~ second file request, the second file
14 request to include the cryptographic information in a second file handle sent with the
15 second file request;~~and~~
16 the proxy to identify, in response to the cryptographic information, the client
17 as having a permission to submit the second file request;~~and~~
18 the proxy to send the second file request to the file server and not to send the
19 cryptographic information with the second file handle to the file server; and;
20 the proxy to receive a second reply from the file server, and the proxy to send
21 the second reply to the client.

Please add new claim 65 as follows:

- 1 65. (New) A method for establishing identity in a file system, comprising:
 - 2 receiving a file request concerning an indicated file from a client, the request
 - 3 received by a proxy;
 - 4 forwarding the request from the proxy to a file server;
 - 5 returning a reply associated with the file request from the file server to the
 - 6 proxy;
 - 7 inserting, by the proxy, metadata into the file handle; and
 - 8 sending, by the proxy, the file handle with the metadata inserted in the file
 - 9 handle to the client, a size of the file handle set to a sum of a length of the server file
 - 10 handle and a length of the proxy metadata, the metadata to be used in further requests
 - 11 to identify the client and the indicated file.